

scorches and elevates the cuticle in blisters; this effect is prevented by covering the hand or face with thin black kerseymere, and the same purpose is attained by the black rete mucosum of the negro. In these cases perspiration comes on, which it does not in the former, and the surface, though actually hotter, is uninjured.

Nature has provided a similar defence from the injury of light, by placing a black pigment at the bottom of the eye of those animals who are exposed to the intensity of the sun's rays; whereas in the inhabitants of shady and dark situations the pigment is either pale, or altogether wanting.

The author concludes this paper by ascribing the beneficial effects which he has shown to result from the black matter in the negro's skin, and at the bottom of the eyes in certain animals, to the power which black surfaces possess of converting the radiant matter of the sun into sensible heat.

On the Magnetic Phenomena produced by Electricity. In a Letter from Sir Humphry Davy, Bart. F.R.S. to W. H. Wollaston, M.D. P.R.S. Read November 16, 1820. [Phil. Trans. 1821, p. 7.]

In repeating the experiments of Oersted, Sir Humphry found that with a voltaic battery of 100 pair of 4-inch plates, the south pole of a magnetic needle placed under the communicating wire of platinum (the positive end of the apparatus being on the right) was strongly attracted by the wire, which was shown to be itself magnetic, by its power of attracting steel filings, and of communicating permanent magnetism to steel bars attached to it transversely, while similar bars placed parallel to the wire were only magnetic during its connection with the voltaic apparatus. The actual contact, however, of the steel wire with that of platinum, or other metal forming the voltaic conductor, is not necessary, for magnetism was communicated to a needle placed transversely to it, but at some distance.

Sir Humphry Davy next details some experiments, showing that the magnetic power is proportionate to the quantity of electricity passing through a given space, without any relation to the transmitting metal; and that the finer the wires, the stronger their magnetism. He found an analogous effect produced by the discharge of a Leyden phial through a wire; and by passing the discharge of a Leyden battery of 17 square feet through a silver wire, with a steel bar transversely attached to it of two inches in length, the latter became powerfully and permanently magnetic. The same effect was produced at a distance of five inches through air, water, and even through thick plates of glass.

When several wires parallel to each other form part of the same circuit, each becomes similarly magnetic to the single wire; and the opposite sides of such wires are in different magnetic states, and consequently attract each other. By arranging two voltaic batteries parallel to each other, the positive end of the one being opposite to the negative end of the other, and transmitting their electricities

through two wires, such wires repel each other, because their opposite sides are in similar magnetic states.

A Communication of a singular Fact in Natural History. By the Right Honourable the Earl of Morton, F.R.S. In a Letter addressed to the President. Read November 23, 1820. [Phil. Trans. 1821, p. 20.]

Being desirous of domesticating the Quagga in this country, his Lordship endeavoured to procure some individuals of that species, but being disappointed in obtaining a female, an attempt was made to breed from the male and an Arabian chestnut mare; the result was a female hybrid, now five years old, and showing her mixed origin both in form and colour.

The Arabian mare has since been bred from, by a black Arabian horse, and the produce, namely, a two year old filly and a year old colt, though in most respects fine specimens of the Arabian breed, are marked with certain stripes and lines belonging exclusively to the Quagga: the manes are especially unlike those of the Arabian breed. It is a striking fact, observes his Lordship, that so many features not belonging to the dam, should in two successive instances be transferred by her to the progeny of a sire who has them not.

Particulars of a Fact, nearly similar to that related by Lord Morton, communicated to the President, in a Letter from Daniel Giles, Esq. Read November 23, 1820. [Phil. Trans. 1821, p. 23.]

In the litter of a black and white sow, by a boar of the wild breed, the chestnut colour of the boar strongly prevailed; a second litter from the same mother, by a boar of a very different breed, retained many peculiarities of the wild breed; and even in a third litter the chestnut colour was to a certain extent evident.

The Croonian Lecture. Microscopical Observations on the following Subjects. On the Brain and Nerves; showing that the Materials of which they are composed exist in the Blood. On the Discovery of Valves in the Branches of the Vas breve, lying between the Villous and Muscular Coats of the Stomach. On the Structure of the Spleen. By Sir Everard Home, Bart. V.P.R.S. Read December 7, 1820. [Phil. Trans. 1821, p. 25.]

By a microscopic examination of the retina and optic nerve, Mr. Bauer found them to consist of globules of $\frac{1}{8000}$ to $\frac{1}{4000}$ of an inch diameter, united by a transparent viscid and coagulable gelatinous fluid: the brain also, according to the same observer, consists of the same globules, united by the viscid jelly, and forming a fibrous arrangement.

After describing the peculiarities in texture of the different parts of the brain, Sir Everard adverts to the circumstance of lymphatics